CAPITAL CHOICE OF THE

RED CHIP COMPANIES IN HONG KONG

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ABSTRACT

The objective of the report is to investigate if there is a difference between the blue chip and red chip companies in The Stock Exchange of Hong Kong in making the financing choice. The results of previous studies have shown that listed companies in Hong Kong generally followed the pecking order, rather than the optimal target mix in financing decisions. They ranked the financing choice in the order of internal equity, debt and external equity.

We attempt to study whether the red chip companies also follow the pecking order, and whether there are any differences from the blue chip companies, taking into consideration of the special characteristics and backgrounds of the red chip companies. This study has compared the patterns and trends of the debt / equity ratios of the red chip companies against those of the blue chip companies, and regression analysis is also used to test the order of financing choice.

In our study, we found that the summary statistics of debt / equity ratios were not steady and quite disperse over the study period. On average, the red chip companies maintained a higher debt / equity ratio than the blue chip companies. However, there is no strong evidence showing that both the blue chip and red chip companies maintain an optimal mix of capital structure. Although we did not find any significant statistical proof on the pecking order practice by the blue chip and red chip companies

from the regression tests, we did find some evidences that both type of companies prefer to use internal equity and debts for financing. However, different period may have different preference in the choice of financing. The finding of higher proportion of red chip companies would use external equity as their first choice of financing means than the blue chip companies during our study period may suggest that China concept stock influence in 1996 to late 1997 encouraged the red chip companies to raise funds by using more external equity.

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CHAPTER I

INTRODUCTION

In previous studies, the results have indicated that listed companies in Hong Kong generally followed the pecking order principle, rather than the optimal target mix in financing decision. The companies generally rank the financing choice in the order of internal equity, debt and external equity. 'Blue chip' companies, such as, the constituent stocks of Hang Seng Index, are most frequently chosen as samples because they are well accepted by investors and academics as representing stocks of the market.

However, since 1993, there are more than 40 state-owned enterprises (H-shares companies) listed on The Stock Exchange of Hong Kong ("SEHK"). They are companies incorporated in China according to the local PRC companies law and are owned by the State Council through various departments or bureau. In addition, there are increasing number of China-related companies, either being controlled by mainland Chinese companies or are closely connected with Chinese concerns, in the market around 1997. These 'red chip' companies have many aspects that are different from the 'blue chip' companies counterpart in the market, but their influence as well as market capitalization are unavoidably increasing. The 'red chip' companies have a closer tie to the mainland and most of them has a high percentage of shareholding in the hands of mainland related entities with management transferred from the local authorities. 'Blue chip' companies, on the other hand, are mainly owned by local families with family members as the management, although some 'blue chip'

companies are operated by professional managers. This report attempts to investigate whether there is any difference between the 'blue chip' and 'red chip' companies on SEHK in making the financing decision taking into account of their different characteristics and backgrounds.

The study has been carried out for the period from 1993 to 1998. 1993 is selected as it is the year in which the first H-share company was listed in Hong Kong. It was the first China incorporated company to raise funds through a stock market outside mainland China. In addition, a number of 'red chip' companies came to Hong Kong through back door listing and capital injection during the period. And Hang Seng China Enterprises Index was established in the same year to measure the performance of the listed H-share companies. During the period, the degree of popularity of the 'red chip' companies were not constant and there were minor variations in the definition of the 'red chip' companies, nevertheless investors still accepted that they formed an integral part of the stock market in Hong Kong. 'Red chip' companies were most popular to the investors in late 1996 to late 1997 just before the Asia financial turmoil.

The report identifies and compares certain patterns and trends of debt / equity ratios, and reveals the difference, if any, between the 'blue chip' and 'red chip' companies in Hong Kong during the period from 1993 to 1998. Through the study of these patterns and trends, the report tries to analyze whether the 'red chip' companies have the same financing choice as the 'blue chip' companies which follows the pecking order principle as set out in certain previous studies.

Statistical techniques of multiple regression are then conducted to test the application of the pecking order by the companies. We have examined the relative percentage change of certain measures to incremental change in fixed and other non-current assets. Also we have assessed the impact on fixed and other non-current assets on the demand for a specific financing mean.

"Blue Chip" Companies

"Blue Chips" is usually a name associated with the large companies that have a consistent good record of profits, stable payment of dividends and good potential for further development, and are widely accepted by investors as the representing stocks of the market.

In the Hong Kong stock market, Hang Seng Index ("HSI") is regarded as a barometer of the market. The HSI comprises 33 constituent stocks which accounts for more than 70% of the total market capitalization on SEHK. The criteria to be a constituent stock are mainly based on the followings:

1. the market capitalization and turnover rankings of the companies;
2. the financial performance of the companies; and
3. the representation of the sub-sector within the HSI directly reflecting that of the market.

In this study, we use the 33 constituent stocks of HSI as the representation of the blue chip companies.

"Red Chip" Companies

"Red Chips" is a specific name used to refer to listed companies on SEHK which are either directly or indirectly controlled by mainland China, or closely connected with Chinese concerns. The red chip companies frequently have the support of strong and resourceful parents from mainland China as they are mostly related to either provincial or municipal authorities, or owned by the State, with access to good quality assets and connection network. Although there are differences in various areas between those China-affiliated companies and those China incorporated State-owned enterprises, investors commonly believed that both these red chip companies are best placed to capitalize on China's booming economy with a potential of injecting those good quality assets into the red chip companies and are one of the most convenient channels to make investment to China through Hong Kong. However, these companies are also the companies in the market that are most affected by the various China factors such as the transparency problem, system differences and exchange controls.

In the Hong Kong stock market, there are 2 indices which are used to measure the stock price performance of these red chip companies. They are namely the Hang Seng China-Affiliated Corporations Index (HSCCI) and the Hang Seng China Enterprises Index (HSCEI).

HSCCI reflects the stock price performance of listed companies with significant equity controlled by entities in mainland China. The criteria for selection as constituent stocks are:

1. at least 35% shareholding directly held by either mainland entities which are defined to include state-owned organizations, provincial or municipal authorities in mainland China or listed or privately owned Hong Kong companies which are controlled by the former; and
2. the company must not be a constituent stock of the HSCEI.

HSCEI includes all the H-shares companies listed on SEHK. That is, all the listed companies in Hong Kong which are incorporated in mainland China according to the PRC companies law and owned by the State Council through various departments, collectively called H-shares companies, are included in HSCEI.

In this study, the constituent stocks of both the HSCCI and HSCEI are used to represent the red chip companies.

The remainder of this paper is organized as follows. The next chapter conducts a literature review of the basic financial principles, theories and their empirical tests. Chapter III describes the basic methodology and the sample firm statistics. Results and analysis on the studied subjects are conducted in Chapter IV with conclusion followed in Chapter V.

CHAPTER II

LITERATURE REVIEW

Optimal Capital Structure

It was the classic paper of Modigliani and Miller (1958) that started the modern theory of corporate finance. The classic paper shows that, under certain restrictive assumptions on the conditions of a perfect capital market, the capital structure of a company is irrelevant to its value, under certain restrictive assumptions on the conditions of a perfect capital market. Since then, a great number of financial academics have studied and further investigated the implication of relaxing the restrictive assumptions on companies' behavior in decisions pertaining the capital structure. These later studies on capital structure by relaxing the restrictive assumptions on companies' behavior have contributed to the understanding of companies' behavior and indicated that capital structure does matter.

In another classic paper, Modigliani and Miller (1963) further state that the level of a company's leverage at which its marginal cost of bankruptcy is just offset by its marginal tax shield defines the optimal capital structure of the company. The introduction of bankruptcy (or financial distress) costs into the tax models leads to such conclusion. It is argued that bankruptcy costs are a positive function of leverage. Thus on one hand an increase in leverage will lead to gains from saving in corporate taxes while on the other hand the likelihood of bankruptcy and other financial distress will increase when leverage increases. As a result, when marginal costs (financial

distress) of debt is equal to the marginal benefit (tax savings), there exists a leverage ratio which is the optimal capital structure of the company that maximize its value.

In subsequent studies, Bradley, Jarrell and Jim (1984) agree with the tax-based models of capital structure and the previous findings of other studies. Masulis (1988) summarizes the results of previous empirical studies and further supports the theory.

It has been argued that the theory based on balancing the benefits (tax savings) and costs (financial distress) of debts is seriously incomplete since it implies that without a possible tax savings together with a positive financial distress costs, debt would never be a rational choice of financing. However, debt was commonly used prior to the existence of tax subsidies on interest payments in the modern business world. Jensen and Meckling (1976) explained the issue with the agency theory and initiated the significant developments in the research of the agency theory in the past two decades. With the concept of agency costs, it is proved that even with an absence of tax benefit, certain amount of debts would still exist in a company if the marginal agency costs of outside equity is higher than the marginal agency costs of debt.

The theory explains that there is an agency relationship between the owner (the principal) and the manager (the agent). However, the separation between ownership and management in modern companies gives rise to conflicts between owner manager and outsider shareholders. Thus company's resources may not be managed in an optimal way which would maximize company value, or a "residual loss" as referred to by Jensen and Meckling (1976) may incur. The value of the company is maximized when total agency costs of debt and external equity are minimized. To minimize the

total agency costs, managers will issue both debt and equity. Hence company's unique optimal capital structure involves a balance of debt and equity, even though no taxes are assumed to exist. It is in line with the study of Titman and Wessels (1988) that transaction costs may be an important determinant of capital structure choice.

All capital structure models based on tax, financial distress and agency costs indicate to the existence of an optimal capital structure determined by equating benefits (tax savings) and costs of debt (financial distress and agency costs). Such models are called static trade-off models. The models overall provide implications that higher-risk companies should borrow less than lower-risk companies when other things being equal; and companies with more tangible and marketable assets would borrow more than companies whose value are derived primarily from intangible assets.

Pecking Order Theory

On the other hand, a different line of research has emerged over the past decades. This new branch of literature began with the research of Myers and Majluf (1984) and Myers (1984). Contrary to the arguments of optimal capital structure, they find that there is an order in which the company will follow in making financing choice, the "pecking order".

Myers and Majluf (1984) develope an equilibrium model under the conditions that managers know more about the company's true value than potential investors. Assuming that a currently undervalued company needs to raise funds to undertake a valuable investment opportunity, the model shows that in certain circumstances, the

company may avoid issuing new external equity since the under-valuation of its equity is so severe that the loss of existing shareholders from the dilution of ownership is greater than the gains from investing in the profitable project. Thus debts will be issued to generate the required funds. So a company would only issue new shares when its shares are overpriced. However, with this understanding, investors will refuse to buy the overpriced new equity, they will mark down the price of such overpriced new equity unless the company has exhausted its debt capacity, that is the company has so much debt that it would face substantial additional costs in issuing more. Therefore investors will effectively force the company to follow a pecking order, that is, use debt financing prior to external equity, until its borrowing capacity is exhausted.

On that basis, the following corporate finance trends arise. Firstly, it is generally better to issue safe securities than risky ones, that is external financing using debt is better than financing by equity. Secondly, there is a tendency to rely on internal sources of funds, as managers avoid issuing undervalued securities by financing first with internal equity and then with external claims that are least likely to be mispriced.

The models are consistent with Donaldson's (1961) findings which predict that companies prefer internal equity first followed by external debts and then external equities in financing. Donaldson (1961) finds that there is managerial preferences in raising funds that appear to reflect the cost difference, that is internal funds are cheaper than external funds and equity securities are more expensive to sell than debt securities. In the study of Myers and Majluf (1984), they also conclude that internal funds are less costly than external funds and will be more preferable by companies. It

implies that an interdependence between investments and financing decisions is induced.

As such, this line of research gives rise to a competing theory in contrast to the mainstream theory of corporate finance that suggests the existence of optimal capital structure for companies. Myers (1984) argues that the existence of information asymmetry as to equity and the corporate desire for ensuring sufficient funds available for financing necessary investments have led to companies first to prefer internal equity to debt, debt to outside equity, in other words, following a pecking order in financing. Thus the higher the degree of information asymmetry, the more likely that pecking order theory will be observed. It is different from the homogeneous information assumed in the static trade-off models.

Although the results of various studies are considered as a mix, there is an increasing number of studies supporting with the pecking order theory. With a survey of 176 U.S. companies' managers about the financing decisions, Pinegar and Wilbricht (1989) conclude that managers of their sample companies are more likely to follow a financing hierarchy than to maintain a target debt-equity mix. In addition, Baskin (1989), after an empirical investigation, concludes that the static optimal capital structure appears to have little power in explaining companies' behavior but on the other hand, there is accumulated evidence which is in favor of the pecking order. Baskin (1989) argues that the theory of static optimal capital structure is deductively derived from basic axioms, which in particular, ignores the material role of asymmetric information.

However, Helwege and Liang (1996) conduct a study which resulted in a negative evidence against the pecking order theory. They examined the financing decisions of a sample of newly listed companies in the U.S. market during the decade following their initial public offerings ("IPO") in 1983. There is little evidence in support of the pecking order in decision to obtain external financing and results did not indicate that companies strongly avoid external financing as predicted by the pecking order theory.

Study on Capital Structure of Hong Kong Companies

In Hong Kong, only few academic research has focused on Hong Kong corporate finance. Ip and Hopewell (1987) investigated the financial structures of companies in Hong Kong and documented an increasing trend in corporate debt ratios for Hong Kong listed companies during the period between 1970 and 1984 although the upward trend was affected during the recession periods. They suggest that business risk has a significant impact on Hong Kong companies' choice of financing mix which is consistent with the theory of optimal capital structure, stating that business risk does affect the financing choice.

On the other hand, Fan, Cheung, Leung and Wong (1995) conducted a survey on Hong Kong listed companies in 1995 to study the capital structure decisions of Hong Kong listed companies. The survey was carried out in the same way as that of Pinegar and Wilbricht (1989) and similar results was found. The majority of the companies conformed more to the pecking order theory than maintaining a long term capital optimal mix in making capital structure decisions. The order preferred by the

managers are consistent with the previous studies. Retained earnings (that is, internal equity) is the most preferred source of funding, followed by straight debt, external (new) common equity and lastly convertible debt.

However, one special feature of the Hong Kong market is that there is effectively no personal tax on debt and equity income. So the existence of corporate tax shield (that is the tax savings benefit) may favor debt financing in Hong Kong and yet as Ip and Hopewell (1987) reported in their study that the long-term debt ratio has maintained at remarkably low levels. This may be due to another special feature of the Hong Kong capital market, the debt market is relatively immature in Hong Kong for raising funds. As a part of the capital market, the debt (or bonds) market plays a less important role compared to the stock market which is more mature with a longer history. The debt market was virtually unknown to the investors until recently in early 1990s when the Hong Kong Government issued the Exchange Fund Bill, which provided the reference interest rate as the risk-free rate for the first time in Hong Kong. Although the debt market is expanding, there are only a few Hong Kong companies have issued corporate bonds domestically. The investors in Hong Kong, even the institutions, do not have a long term investment perspective as in overseas markets. Accordingly companies may prefer to raise their funds with equity.

Undoubtedly, there are many areas in corporate finance for Hong Kong companies awaiting for investigation and further studies. The major objective of our present study is to investigate to what extend Hong Kong companies would behave according to the pecking order developed by academics in making financing decisions, focusing on the red chip companies.

CHAPTER III

DATA AND METHODOLOGY

The focus of this study is to compare the financing choice of the blue chip and the red chip companies on SEHK. Listed companies under the HSI are used as representation of the blue chip companies as they usually have a consistent record of profits, stable payment of dividends and good potential for future developments, and are well accepted by investors and academics as representing stocks of the market. Whereas those under the HSCEI and HSCCI are selected as representation of the red chip companies as both the China-affiliated companies and China incorporated State-owned enterprises are believed to be the most appropriate channels to invest in China through Hong Kong and to share the economic boom in China.

We have selected the companies based on the constituent stocks of the above indices listed at 31 December for the years from 1993 to 1998 according to the information provided by the Hang Seng Index Services Limited. Companies which are not the constituent stock of the relevant indices as at 31 December 1998 are excluded from our samples. Moreover, listed companies under the finance category are excluded as their financing needs and mechanisms are substantially different from the other companies and are beyond our scope of study in this paper. Among the sample companies, three listed companies are overlapped in the HSI and HSCCI. In view of the immaterial impact, we have not excluded these companies from both indices. (A detailed list of the sample companies selected from the constituent stocks of the indices are included in Appendix I to III).

The data used for analysis include the financial data of the listed companies of the above three indices during the period from 1993 to 1998. Financial data have been obtained from the annual reports of those listed companies for the relevant calendar year.

The testing is conducted under two areas:

A. Pattern and trend of debt / equity ratios

We compare the pattern and trend of the debt / equity ratios of the blue chip and the red chip companies for the period from 1993 to 1998 by using the summary statistics - minimum, maximum, mean, median and standard deviation and assess whether they follow a pecking order.

The following definition of debt / equity ratio is used for calculation:

Debt / equity ratio = total liabilities / shareholders' fund

B. Empirical test on the pecking order principle

We test the pecking order application by examining the relative increase in internal equity, debts and external equity as a percentage of increase in fixed and other non-current assets, and also performing multiple regression to examine their relationships.

We calculate the various incremental values of the financing means individually as a percentage of incremental value of fixed and other non-current assets and the formula for calculation is:

Increase in A as a % of increase in fixed and other non-current assets $= (A_t - A_{t-1} / TA_t - TA_{t-1}) \times 100\%$

where A = internal equity, debts or external equity

TA = fixed and other non-current assets

t, t-1 = balance at a particular year and the year before

Increase in fixed and other non-current assets is defined as proxy of the funding demand which will be in turn financed by various means, i.e. internal equity, debts or external equity. Internal equity is defined as retained earnings while debts is defined as total liabilities. External equity is proxy by paid-up share capital.

Besides, we also perform multiple regression to assess the impact of incremental change in fixed and other non-current assets on the demand for a specific financing mean and the relationship between different financing means. Three regression models are conducted.

$TE = a + b(TA) + c(IE)$ ---------- (1)

$D = a + b(TA) + c(IE) + d(EE)$ ---------- (2)

$EE = a + b(TA) + c(IE) + d(D)$ ---------- (3)

where D = increase in debts

IE = increase in internal equity

EE = increase in external equity

TE = increase in total external financing

(i.e. debts and external equity)

TA = increase in fixed and other non-current assets

CHAPTER IV

RESULTS AND FINDINGS

Pattern and Trend of Debt / Equity Ratios

The summary statistics of debt / equity ratios of the blue chip and red chip companies are presented in Table 1 and 2 respectively. For the blue chip companies, the average debt / equity ratios ranged from 58.63% to 73.05% during the years from 1993 to 1998. The average debt / equity ratio was not quite steady within the period and fluctuated within a wide band of 14.42% together with the material fluctuation in the standard deviation from 38.08% to 75.89% among these years. However, it indicated that there is a slightly increasing trend of average debt / equity ratio starting from 1995 to 1998.

Table 1

Debt / Equity Ratio of the Blue Chip Companies in Hong Kong for the Period from 1993 to 1998

	1998	1997	1996	1995	1994	1993
Average	73.05%	71.38%	62.14%	59.53%	62.54%	58.63%
Minimum	14.48%	10.82%	9.30%	15.81%	10.09%	13.42%
Maximum	309.88%	340.47%	269.71%	175.21%	218.40%	213.17%
Median	60.25%	45.71%	52.60%	50.03%	56.42%	43.98%
Standard deviation	64.57%	75.89%	57.40%	38.08%	44.35%	44.33%

For the red chip companies, the fluctuation of average debt / equity ratio was within the band of 19.04% with the lowest of 91.24% in 1997 and the highest of 110.28% in 1996. Besides, the difference of standard deviation between years was even wider as compared with the blue chip companies, ranging from 60.45% to 165.06%. The negative minimum debt / equity ratio in 1998 is due to the result of shareholders' fund deficit of Guangnan (Holdings) Ltd which can be regarded as a special case. If the debt / equity ratio of this company is excluded in 1998, the minimum debt / equity ratio is 1.71%. There was an increasing trend of average debt / equity ratio from 1993 to 1996, but it is experienced a sudden fall in 1997 and a rebound in 1998. This phenomenon is different with that of the blue chip companies.

In late 1993, the PRC government implemented an austerity policy to cool down the overheated economy which made companies difficult to get funds from central government or borrow locally in China. Thus, it enhanced the companies' needs of raising funds outside mainland China, either in Hong Kong or overseas. Besides, red chip companies with the assistance of its mainland owner, may have a better exposure internationally, thus can relatively easier to raise fund through the overseas debt markets than the blue chip companies, given the local debt market is immature. All these did facilitate or encourage the red chip companies to borrow more and perhaps explain the increasing trend in debt / equity ratio of the red chip companies from 1993 to 1996. However, the popularity of the red chip companies reached its climax when the idea of China concept stock was highly appreciated and accepted by investors in Hong Kong and overseas in early 1997. The trading volume of the shares of the red chip companies reached their record high together with the HSCEI and HSCCI in mid 1997. This may make the red chip companies to switch their preferences to equity

financing as it is relatively more cost efficient and easier for arranging equity financing. Furthermore, with the breakout of financial problem of a number of red chip companies shortly after the financial crisis in late 1997, it accelerated the decrease of debt / equity ratio until its rebound in 1998.

Table 2

Debt / Equity Ratio of the Red Chip Companies in Hong Kong for the Period from 1993 to 1998

	1998	1997	1996	1995	1994	1993
Average	101.63%	91.24%	110.28%	107.80%	104.26%	102.77%
Minimum	-357.78%	4.68%	7.13%	15.41%	18.23%	6.54%
Maximum	1,302.92%	384.01%	594.81%	359.62%	452.54%	319.49%
Median	67.85%	60.45%	71.57%	91.92%	87.37%	76.50%
Standard deviation	165.06%	60.45%	106.81%	74.14%	83.35%	83.86%

As compared the statistical results of the blue chip and red chip companies set out above, different picture is found. Since the 1980s and the period of Deng Ziaoping's regime, China has undergone a number of economic periods. The biggest engines of economic growth during the 1980s have been the export-oriented coastal regions and the special economic zones. The growth was not driven by many macro-economic tools, but somehow it was influenced by the real political tools e.g. state funding control, austerity measures and also political crackdown. Although starting from 1990s, China has changed its way in economic policy by using more macro-economic methods, there is still uncertainty of its political stability. Besides, the foreign exchange is still under strict control by the Chinese government, companies are not easy to remit money out of China. Accounting system, taxation and

investment policies are also refining in order to cope with increasing openness of Chinese economy, frequent changes are expected. All these environmental factors have made the red chip companies facing a more volatile external environment and higher business and operating risk than the blue chip companies. According to the implication of optimal capital structure, higher risk companies should borrow less than lower risk companies. However, the results show that the red chip companies maintained a higher debt / equity ratio than the blue chip companies which seems contradictory to the optimal capital structure theory.

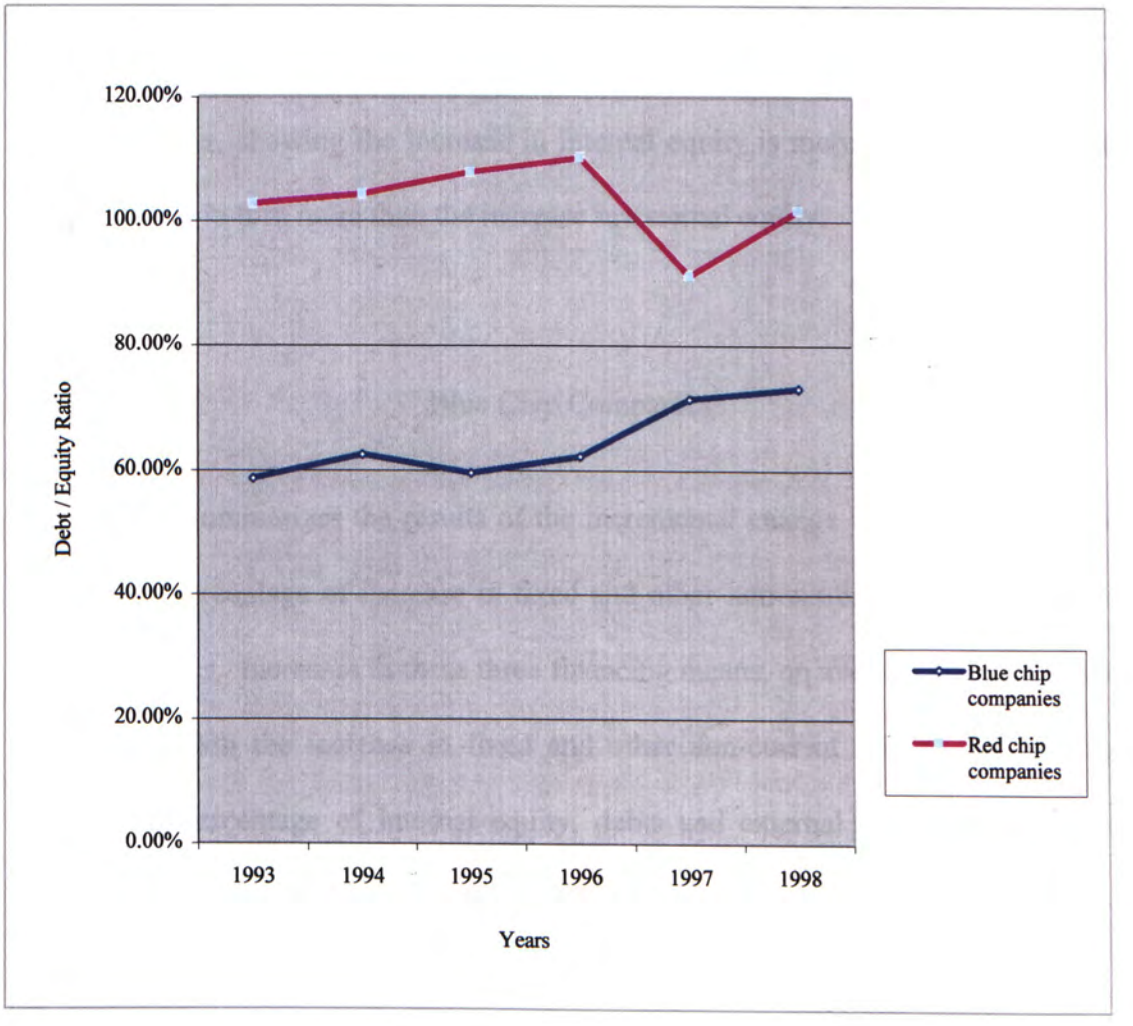
On the other hand, the pecking order is established on the basis that the problem of asymmetric information does force a company to follow the sequence of the pecking order and thus companies which are associated with more asymmetric information should seek debt financing rather than equity. Most of the red chip companies are owned by China's leading ministries, the State Council and provincial and municipal authorities before their listing, companies' information disclosure requirements are less comprehensive in China. Moreover, majority of the management of the red chip companies are controlled by the officials of the Chinese authorities, they are not used to manage the company in achieving objectives as the same way as listed company. Besides, those officials are representatives from different organizations, State Council, provincial and municipal authorities, they may have different management perspectives and beliefs. Such that, they may have to consider the interests of their own representing parties or political interests in making decision for the companies, and thus companies' interest may be overlooked. Transparency of companies information is limited and there seems to have larger

existence of asymmetric information in these companies which should drive them to use more debt financing as according to the pecking order theory.

From the above tables, the debt / equity ratios on average for the red chip companies are higher than that of the blue chip companies which shows some indication that pecking order may have been followed. However, we cannot quickly draw the conclusion that the pecking order has been followed in explaining the financing behaviors in our samples. Other factors like companies' size are also considered to have impact on the financing choice. Larger companies are able to raise debt at lower costs due to their lower probability of bankruptcy and lower degree of information asymmetry. Higher likelihood of profit generation by larger companies to cover the interest cost also encourage them to borrow more. In addition, the public debt markets in Hong Kong are at an infancy stage and far not mature enough to accommodate a lot of fund raising activities as compared with countries like the United States. And only a few large companies in Hong Kong have international exposure which are capable to raise fund from overseas debt market, not to mention the middle size companies. So most of the companies in Hong Kong may have limited choice of debt financing, mostly in short-term. As a result, the lack of complete choice of debt financing may have forced the local listed companies to rely more heavily on other types of external financing such as bank borrowings and equity.

Figure 1

Average Debt / Equity Ratio of the Blue Chip and Red Chip Companies for the Period from 1993 to 1998



Empirical Test of Pecking Order Applications in Hong Kong

We postulate that if pecking order is true and there is an increase in fixed and other non-current assets, the relative increase in internal equity, debts and external equity as a percentage of the increase in fixed and other non-current assets may reflect a pecking order, showing the increase in internal equity is more than the increase in debts which is in turn more than the increase in external equity.

Blue Chip Companies

Table 3 summarizes the results of the incremental change in different financing means as a percentage of increase in fixed and other non-current assets for the blue chip companies. Increases in these three financing means, on average, have a positive relationship with the increase in fixed and other non-current assets. The average incremental percentage of internal equity, debts and external equity are 113.24%, 30.72% and 9.37%. This, in general, indicates that internal equity is the most preferred one among the three and external equity being the least preferred one. It also indicates that the fund raised from internal equity may not be just for the financing of increase in fixed and other non-current assets as it has a percentage over 100%.

We also did a tabulation to assess the order of increases (as a percentage of the increase in fixed and other non-current assets) in internal equity, debts and external equity. As revealed in Part II of Table 3, the most popular order in our study which has 45 counts of cases in our sample companies is that debts is greater than or equal to

the internal equity which is in turn greater than or equal to external equity. While there are only 20 counts of cases that follow the sequence of pecking order, that is internal equity is greater than or equal to debts which is in turn greater than or equal to external equity. But undoubtedly, the external equity is the least preferred financing mean as there are only 4 cases that in the order with external equity being the first choice.

Part III of Table 3 also presents three cases of regression. The first case uses the increase in total external finance (i.e. debts plus external equity) as dependent variable while increase in fixed and other non-current assets and internal equity are the independent variables. The regression result confirms the positive relationship between the increase in fixed and other non-current assets and external finance. The coefficient of increase in fixed and other non-current assets is 0.5416 and the t-statistics is at 4.7923 which is significant at 5% level. By holding the variable of increase in fixed and other non-current assets being constant, there is a negative relationship between external finance and internal equity with coefficient of -0.5605 but t-statistics is insignificant. Overall, however, R Square is only 20.13% meaning the explanatory power of this regression is not strong.

The second case uses the increase in debts as the dependent variable, while the independent variables are increase in fixed and other non-current assets, internal equity and external equity. Still, there is positive relationship between the increase in debts and fixed and other non-current assets with coefficient of 0.5582 and t-statistics of 4.9047. Internal equity indicates a negative relationship with debts. The coefficient of internal equity is -0.5999 but the t-statistics shows insignificancy (t-

statistics equals to -1.5576). External equity indicates a positive relationship with debts and the coefficient is 1.3604. However, the t-statistics is insignificant at 5% level and R Square is only 21.05%, meaning a poor explanatory power.

The third case uses the increase in external equity as dependent variable. The independent variables are the increase in fixed and other non-current assets, internal equity and debts. The relationship between external equity and fixed and other non-current assets is confirmed negative while the relationship between external equity and internal equity and also the total debts are confirmed positive. However, the value of coefficient for all three variables are low and they are statistically insignificant. Besides, the R Square has a very weak explanatory power at 2.3%.

To sum up the findings on the financing choice of the blue chip companies, it indicates that there is an order of internal equity, debts and external equity by using the average percentage of incremental value of these three means as a percentage of increase in fixed and other non-current assets. However, a different picture is found by counting on the actual cases on the order of increases (as a percentage of increase in fixed and other non-current assets) in internal equity, debts and external equity. The most popular order is found to be debts, internal equity and external equity. Although the explanatory power of the three regression cases are not strong, it still sheds some lights on the financing policy of the blue chip companies that the external equity is the least preferred one. It also indicates that there must be some other factors, such as the dividend policy, interest rate, capital market conditions and company size that need to be considered or included in the regression to provide a better explanation for the choice of financing.

Table 3

The Relationships between Increments in Fixed and Other Non-current Assets, Internal Equity, Debts and External Equity of the Blue Chip Companies

Part I : As % of increase in fixed and other non-current assets

	Increase in fixed and other non-current assets	Debts ("D")	Internal Equity ("IE")	External Equity ("EE")
No. of counts	95	95	95	95
	HK$'000			
Average	7,206,848	30.72%	113.24%	9.37%
Minimum	9,300	-5120.43%	-62.31%	-46.19%
Maximum	47,072,000	2438.23%	4874.19%	473.12%
Median	4,152,000	45.37%	28.53%	0.01%

Part II : The relative increments of debts, internal equity and external equity

	IE>=D>=EE	IE>=EE>=D	D>=IE>=EE
No. of counts	20	19	45

	D>=EE>=IE	EE>=D>=IE	EE>=IE>=D
No. of counts	8	0	4

Table 3 (continued)

The Relationships between Increments in Fixed and Other Non-current Assets, Internal Equity, Debts and External Equity of the Blue Chip Companies

Part III : Summary of regression results

Y Variable X Variables	External finance (i) Fixed & other non-current assets (ii) Internal equity	Debts (i) Fixed & other non-current assets (ii) Internal equity (iii) External equity	External equity (i) Fixed & other Non-current assets (ii) Internal equity (iii) Debts
Observations	95	95	95
Coefficient			
Fixed & other non-current assets	0.5416	0.5582	-0.0089
Internal equity	-0.5605	-0.5999	0.0186
External equity	N/A	1.3604	N/A
Debts	N/A	N/A	0.0034
t-statistics			
Fixed & other non-current assets	4.7923	4.9047	-1.4111
Internal equity	-1.4593	-1.5576	0.9633
External equity	N/A	0.6483	N/A
Debts	N/A	N/A	0.6483
Significance 5%			
Fixed & other non-current assets	Yes	Yes	No
Internal equity	No	No	No
External equity	N/A	No	N/A
Debts	N/A	N/A	No
R Square	20.13%	21.05%	2.30%

Red Chip Companies

The above tests done for the blue chip companies are repeated for the red chip companies to see whether there is any difference in their financing choice. Results are summarized in Table 4. On average, debts has a negative relationship with the increase in fixed and other non-current assets with -210.84%. While the other two means of financing, internal equity and external equity have a positive relationship. The average incremental percentage of internal equity and external equity are 171.64% and 59.99%. This reflects that internal equity is the most preferred one among the three and debts being the least preferred one. Similar to the result of the blue chip companies, the percentage for increase in internal equity as a percentage of increase in fixed and other non-current assets is over 100% indicating that fund raised from internal equity may be used for other purposes other than the financing of increase in fixed and other non-current assets.

For the second part of ranking the order of increases (as a percentage in the increase in fixed and other non-current assets) in internal equity, debts and external equity, a similar picture was found for the red chip companies as the blue chip companies. As revealed in Part II of Table 4, there are 72 cases in which debts is greater than or equal to the internal equity which is in turn greater than or equal to external equity, that has the highest frequency in our study. While there are only 14 counts of cases showing the sequence of pecking order in which internal equity is greater than or equal to debts which is in turn greater than or equal to external equity.

Table 4 also presents the results of three cases of regression. The regression result of the first case, with external finance being the dependent variable and increase

in fixed and other non-current assets and internal equity being the independent variables, confirms the positive relationship between the increase in fixed and other non-current assets and external finance. The coefficient of increase in fixed and other non-current assets is 0.5885 and the t-statistics is at 13.1603 which is significant at 5% level. By holding the variable of increase in fixed and other non-current assets being constant, there is a negative relationship between external finance and internal equity with coefficient of -0.2404 and the t-statistics is insignificant. Overall, R Square is 51.6% meaning the explanatory power of this regression is strong.

The second case uses the increase in debts as the dependent variable, while the independent variables are fixed and other non-current assets, internal equity and external equity. Still, there is positive relationship between the increase in debts and fixed and other non-current assets with coefficient of 0.5726 and t-statistics of 13.0776. Internal equity indicates a negative relationship with debts with coefficient of -0.2756 but the t-statistics is insignificant (t-statistics equal to -1.1788). External equity indicates a negative relationship with debts but the coefficient is low and the t-statistics is insignificant at 5% level. R Square is 51.35% indicating a strong explanatory power.

The third case uses the increase in external equity as dependent variable. The independent variables are the increase in fixed and other non-current assets, internal equity and debts. External equity has a positive relationship with both fixed and other non-current assets and internal equity, but has a negative relationship with debts. However, the value of coefficient for all three variables are low and they are

statistically insignificant. Besides, the R Square is also low at 2.17% with very limited explanatory power.

To summarize the findings on the financing choice of the red chip companies, it is indicated that there is an order of internal equity, debts and external equity by using the average percentage of incremental value of these three means as a percentage of increase in fixed and other non-current assets. However, a different picture is found by counting on the actual cases on the order of increases (as a percentage of increase in fixed and other non-current assets) in these three means. The most popular order is found to be debts, internal equity and external equity.

As compared the result of the blue chip and red chip companies, we found that basically both types of companies prefer to use internal equity and debts for financing. However, higher proportion of the red chip companies would use external equity as their first priority of financing means than the blue chip companies. This may due to the fact that the red chip companies usually have a relatively higher percentage of shareholding being held by controlling entities, thus are more willing to be diluted in equity financing. Moreover, with the increased understanding and acceptability from foreign investors, they may intend to increase the availability and liquidity of their shares in the market by issuing more shares through equity financing. While on the other hand, most blue chip companies are family owned with shareholding of around 35 percent to 50 percent, thus they are more reluctant to be diluted in financing by equity. Moreover, during the period of 1996 and 1997 before the financial crises, investors were optimistic about the growth of China market, which in turn led to a buying frenzy of China concept stock. In this connection, investors were even willing

to buy overpriced stock at such a favorable blooming market conditions and thus relatively external equity became a more frequently used financing means by the red chip companies during this period.

Table 4

The Relationships between Increments in Fixed and Other Non-current Assets, Internal Equity, Debts and External Equity of the Red Chip Companies

Part I : As % of increase in fixed and other non-current assets

	Increase in fixed and other non-current assets	Debts ("D")	Internal equity ("IE")	External equity ("EE")
No. of counts	189	189	189	189
	HK$'000			
Average	691,314	-210.84%	171.64%	59.99%
Minimum	277	-47032.31%	-20.07%	-806.77%
Maximum	6,017,470	1117.09%	17711.42%	8407.86%
Median	322,743	51.18%	1.24%	10.17%

Part II : The relative increments of debts, internal equity and external equity

	IE>=D>=EE	IE>=EE>=D	D>=IE>=EE
No. of counts	14	30	72

	D>=EE>=IE	EE>=D>=IE	EE>=IE>=D
No. of counts	43	8	22

Table 4 (continued)

The Relationships between Increments in Fixed and Other Non-current Assets, Internal Equity, Debts and External Equity of the Red Chip Companies

Part III : Summary of regression results

Y Variable X Variables	External finance (i) Fixed & other non-current assets (ii) Internal equity	Debts (i) Fixed & other Non-current assets (ii) Internal equity (iii) External equity	External equity (i) Fixed & other non-current assets (ii) Internal equity (iii) Debts
Observations	189	189	189
Coefficient			
Fixed & other non-current assets	0.5885	0.5726	0.0201
Internal equity	-0.2402	-0.2756	0.0368
External equity	N/A	-0.0734	N/A
Debts	N/A	N/A	-0.0052
t-statistics			
Fixed & other non-current assets	13.1603	13.0776	1.2481
Internal equity	-1.0010	-1.1788	0.5882
External equity	N/A	-0.2660	N/A
Debts	N/A	N/A	-0.2660
Significance 5%			
Fixed & other non-current assets	Yes	Yes	No
Internal equity	No	No	No
External equity	N/A	No	N/A
Debts	N/A	N/A	No
R Square	51.60%	51.35%	2.17%

CHAPTER V

CONCLUSION

Our summary statistics on debt / equity ratio indicates on average that the blue chip and the red chip companies did not maintain a steady percentage and with high dispersion over the period from 1993 to 1998. While the average debt / equity ratio of the red chip companies are higher than the blue chip companies, it may be attributed by the larger existence of asymmetric information of the red chip companies than the blue chip companies. However, due to limited time, we did not carry out any further test to verify the relationship between the degree of information asymmetry and usage of debts.

We also performed regressions to find out the relationship between the increase in fixed and other non-current assets with the financing means of internal equity, debts and external equity. However, the regression results do not provide any strong evidence for supporting or refuting whether the pecking order is followed by the blue chip and red chip companies.

Although we could not statistically prove or refute the pecking order theory and static trade-off model based on our empirical data, we believe that our study at least sheds some lights on certain factual aspects of the capital structure of the blue chip and red chip companies. Our findings may suggest that either of the static trade-off model or the pecking order theory can only provide partial explanation for the companies' behavior on capital choice. Neither in theory nor in practice are there

simple norms or guidelines for a financing decision. In reality, the following factors also affect the managers of a company in making their financing choice:

- Corporate environmental factors such as corporate and personal tax, bankruptcy costs, agency cost, managerial compensation, distribution of ownership and voting rights, flotation costs and government regulations;
- Debt securities market in Hong Kong is at an infancy stage. As such, the debt securities may not be viewed as a common alternative for the investors. This immature environment will certainly limit the financing choice of the companies especially when comparing to the companies in other markets, like the United States; and
- The differences of economic and political environment of China and Hong Kong may also affect the companies' behavior in financing choice.

In order to formulate a financing policy which is most appropriate to a company, corporate experience and insights have to be capitalized with due consideration to the internal needs and market condition.

APPENDIX I

SAMPLE COMPANIES SELECTED FROM THE HANG SENG INDEX CONSTITUENT STOCKS

	1998	1997	1996	1995	1994	1993
Amoy Properties Ltd.	x	x	x	x	x	
Cathay Pacific Airways Ltd.	x	x	x	x	x	x
Cheung Kong (Holdings) Ltd.	x	x	x	x	x	x
Cheung Kong Infrastructure Holdings Ltd.	x	x				
China Light & Power Co. Ltd.	x	x	x	x	x	x
China Resources Enterprises Ltd.	x	x				
China Telecom (Hong Kong) Ltd.	x					
CITIC Pacific Ltd.	x	x	x	x	x	x
Great Eagle Holdings Ltd.	x	x	x	x	x	x
Guangdong Investment Ltd.	x	x	x	x	x	x
Hang Lung Development Co. Ltd.	x	x	x	x	x	x
Henderson Investment Ltd.	x	x	x			
Henderson Land Development Ltd.	x	x	x	x	x	x
Hong Kong & China Gas Co. Ltd.	x	x	x	x	x	x
Hong Kong Electric (Holdings) Ltd.	x	x	x	x	x	x
Hong Kong Telecommunication Ltd.	x	x	x	x	x	x
The Hongkong and Shanghai Hotels, Ltd.	x	x	x	x	x	x
Hopewell Holdings Ltd.	x	x	x	x	x	x
Hutchison Whampoa Ltd.	x	x	x	x	x	x
Hysan Development Co. Ltd.	x	x	x	x	x	x
New World Development Co. Ltd.	x	x	x	x	x	x
Shanghai Industrial Holdings Ltd.	x					
Shangri-La Asia Ltd.	x	x	x	x		
Sino Land Co. Ltd.	x	x	x	x		
Sun Hung Kai Properties Ltd.	x	x	x	x	x	x
Swire Pacific Co. Ltd.	x	x	x	x	x	x
Television Broadcasts Ltd.	x	x	x	x	x	x
The Wharf (Holdings) Ltd.	x	x	x	x	x	x
Wheelock and Co. Ltd.	x	x	x	x	x	x

APPENDIX II

SAMPLE COMPANIES SELECTED FROM THE HANG SENG CHINA-AFFILIATED CORPORATIONS INDEX CONSTITUENT STOCK

	1998	1997	1996	1995	1994	1993
Beijing Development (HK) Ltd.	x					
Beijing Enterprises Holdings Ltd.	x					
CASIL Telecommunications Holdings Ltd.	x					
China Aerospace International Holdings Ltd.	x	x	x	x	x	x
China Everbright International Ltd.	x	x	x	x	x	x
China Everbright Ltd.	x	x				
China Everbright Technology Ltd.	x	x				
China Foods Holdings Ltd.	x	x	x	x	x	x
China Merchants Holdings (International) Co. Ltd.	x	x	x	x	x	x
China Overseas Land & Investment Ltd.	x	x	x	x	x	x
China Pharmaceutical Enterprise & Investment Corporation Ltd.	x	x	x	x	x	
China Resources Beijing Land Ltd.	x					
China Resources Enterprises Ltd.	x	x	x	x	x	x
China Travel International Investment Hong Kong Ltd.	x	x	x	x	x	x
Chu Kong Shipping Development Co. Ltd.	x					
CNPC (Hong Kong) Ltd.	x	x	x	x	x	
Continental Mariner Investment Co. Ltd.	x	x	x	x	x	x
COSCO International Holdings Ltd.	x					
COSCO Pacific Ltd.	x	x	x	x	x	
Denway Investment Ltd.	x	x	x	x	x	x
Founder (Hong Kong) Ltd.	x	x	x	x		
GITIC Enterprises Ltd.	x					
Guangdong Brewery Holdings Ltd.	x					
Guangdong Investment Ltd.	x	x	x	x	x	x
Guangdong Tannery Ltd.	x					
Guangnan (Holdings) Ltd.	x	x	x	x	x	
Guangzhou Investment Co. Ltd.	x	x	x	x	x	x
GZI Transport Ltd.	x					
GZITIC Hualing Holdings Ltd.	x	x	x	x	x	x
Legend Holdings Ltd.	x	x	x	x	x	
Min Xin Holdings Ltd.	x	x				
Ng Fung Hong Ltd.	x	x	x	x		
ONFEM Holdings Ltd.	x	x	x	x	x	x
Poly Investments Holdings Ltd.	x	x	x	x	x	x
Shanghai Industrial Holdings Ltd.	x	x	x			
Shenyin Wanguo (HK) Ltd.	x	x	x	x	x	x
Shenzhen International Holdings Ltd.	x	x				
Shougang Concord Century Holding Ltd.	x	x	x	x	x	x
Shougang Concord International Enterprises Co. Ltd.	x	x	x	x	x	x
Shougang Concord Technology Holdings Ltd.	x	x	x	x	x	
Shougang Concord Grand Ltd.	x	x	x	x	x	x
Shum Yip Investment Ltd.	x					
Stone Electronic Technology Ltd.	x	x	x	x	x	x
Top Glory International Holdings Ltd.	x	x	x	x	x	x

APPENDIX III

SAMPLE COMPANIES SELECTED FROM THE HANG SENG CHINA-AFFILIATED CORPORATIONS INDEX CONSTITUENT STOCK

	1998	1997	1996	1995	1994	1993
Angang New Steel Co. Ltd.	x	x				
Anhui Conch Cement Co. Ltd.	x	x				
Anhui Expressay Co. Ltd.	x	x	x			
Beijing Datang Power Generation Co. Ltd.	x	x				
Beijing North Star Co. Ltd.	x	x				
Beijing Yanhua Petrochemical Co. Ltd.	x	x				
Beiren Printing Machinery Holdings Ltd.	x	x	x	x	x	x
CATIC Shenzhen Holdings Ltd.	x	x				
Chengdu Telecommunications Cable Co. Ltd.	x	x	x	x	x	
China Eastern Airlines Corporation Ltd.	x	x				
China Shipping Development Co. Ltd.	x	x	x	x	x	
China Southern Airlines Co. Ltd.	x	x				
Chongqing Iron & Steel Co. Ltd.	x	x				
Dongfang Electrical Machinery Co. Ltd.	x	x	x	x	x	
First Tractor Co. Ltd.	x	x				
Guangdong Kelon Electrical Holdings Co. Ltd.	x	x	x			
Guangshen Railway Co. Ltd.	x	x	x			
Guangzhou Pharmaceutical Co. Ltd.	x	x				
Guangzhou Shipyard International Co. Ltd.	x	x	x	x	x	x
Harbin Power Equipment Co. Ltd.	x	x	x	x	x	
Huaneng Power International, Inc.	x					
Jiangsu Expressway Co. Ltd.	x	x				
Jiangxi Copper Co. Ltd.	x	x				
Jilin Chemical Industrial Co. Ltd.	x	x	x	x		
Jingwei Textile Machinery Co. Ltd.	x	x	x			
Kunming Machine Tool Co. Ltd.	x	x	x	x	x	x
Luoyang Glass Co. Ltd.	x	x	x	x	x	
Maanshan Iron & Steel Co. Ltd.	x	x	x	x	x	x
Nanjing Panda Electronics Co. Ltd.	x	x	x			
Northeast electrical Transmission & Transformation Machinery Manufacturing Co. Ltd.	x	x	x	x		
Qingling Motors Co. Ltd.	x	x	x	x	x	
Shangdong Xinhua Pharmaceutical Co. Ltd.	x	x	x			
Shanghai Petrochemical Co. Ltd.	x	x	x	x	x	x
Shenzhen Expressway Co. Ltd.	x	x				
Sichuan Expressway Co. Ltd.	x	x				
Tianjin Bohai Chemical Industry (Group) Co. Ltd.	x	x	x	x	x	
Tsingtao Brewery Co. Ltd.	x	x	x	x	x	x
Yanzhou Coal Mining Co. Ltd.	x					
Yizheng Chemical Fibre Co. Ltd.	x	x	x	x	x	
Zhejiang Expressway Co. Ltd.	x	x				
Zhenhai Refining & Chemical Co. Ltd.	x	x	x	x	x	

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